

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A light source device, comprising:

a light-emitting tube including a light-emitting portion that generates a light beam by an electric discharge between electrodes, and sealing portions provided on both sides of the light-emitting portion; and

a reflector including a neck portion provided with an insertion hole to which the light-emitting tube is inserted, and a reflecting portion integrally formed with the neck portion and having an ellipsoidal curved reflecting surface that irradiates the light beam emitted by the light-emitting portion ~~and aligns to align~~ the light beam in a predetermined direction,

~~wherein~~ the light-emitting tube ~~has~~ having a sub-reflection mirror that covers substantially ~~front~~ a front half of the light-emitting portion,

~~wherein~~ the insertion hole ~~has~~ having a diameter that is enlarged from the base end thereof ~~toward the~~ toward a distal end in a light irradiation ~~direction, and~~ direction,

~~wherein~~ the opening diameter of the insertion hole on the side of the reflecting surface ~~is greater~~ being greater than the external diameter of the sub-reflection mirror while the opening diameter is within the internal diameter of a valid reflection area of the reflector, the internal diameter being defined by a front focal position of the reflector and the outer periphery of the sub-reflection ~~mirror.~~ mirror, and

the internal diameter of the valid reflection area of the reflector being a diameter of a circle defined by a nodal line between the reflection surface of the reflector and a cone which is formed by the boundary of the light beam shielded by the sub-reflection

mirror out of the light beam reflected by the reflecting surface of the reflector and condensed to the front focal position of the reflector.

2. (Currently Amended) A projector comprising:

a light source device;

an optical modulator that modulates a light beam irradiated by the light source device in accordance with image information to form an optical image; and

a projection optical device that projects the optical image formed by the optical modulator in an enlarged manner,

wherein the light source device ~~comprises~~comprising:

a light-emitting tube including a light-emitting portion that generates a light beam by an electric discharge between electrodes, and sealing portions provided on both sides of the light-emitting portion; and

a reflector including a neck portion provided with an insertion hole to which the light-emitting tube is inserted, and a reflecting portion integrally formed with the neck portion and having an ellipsoidal curved reflecting surface that irradiates the light beam emitted by the light-emitting portion ~~and aligns to align~~ the light beam in a predetermined direction,

~~wherein~~ the light-emitting tube ~~has~~having a sub-reflection mirror that covers substantially front half of the light-emitting portion,

~~wherein~~ the insertion hole ~~has~~having a diameter that is enlarged from the base end thereof toward the distal end in a light irradiation direction, ~~and~~

~~wherein~~ the opening diameter of the insertion hole on the side of the reflecting surface is being greater than the external diameter of the sub-reflection mirror while the opening diameter is within the internal diameter of a valid reflection area of the reflector, the

internal diameter being defined by a front focal position of the reflector and the outer periphery of the sub-reflection ~~mirror-mirror~~, and

the internal diameter of the valid reflection area of the reflector being a diameter of a circle defined by a nodal line between the reflection surface of the reflector and a cone which is formed by the boundary of the light beam shielded by the sub-reflection mirror out of the light beam reflected by the reflecting surface of the reflector and condensed to the front focal position of the reflector.